

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**APPLICATION FOR LETTERS PATENT**

**INVENTOR:**

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**TITLE:**

A System for Enhancing Buyers Performance in Electronic Commerce

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## BACKGROUND OF THE INVENTION

### Field of Invention

The present invention relates generally to the field of electronic commerce. More specifically, the present invention is related to a system and a method for enhancing buyer's performance in electronic commerce.

### Discussion of Prior Art

Commerce includes goods, services, financial instruments such as mortgages, securities, tickets, travel fares and accommodation, and more. Figure 1 illustrates various methods of setting transaction prices in electronic commerce, some of which are detailed below:

- a) Posted prices 102: Seller posts all prices of item(s) or service(s) the seller provides, and it is up to the buyer to decide whether they like to pay such prices.
- b) Quoted prices 104: Based on some information the seller has about the buyer, the seller quotes a personalized price to the buyer. Every seller that requires registration before releasing prices can "quote" rather than "post" a price.
- c) Bid prices 106 : Buyer commits to the seller to pay a price the buyer chooses.
- d) Auctions and reverse auctions 108: Buyers compete on items for sale or sellers

compete for supplying wanted items.

5 Naturally, sellers are better positioned to take advantage of the new opportunities offered by electronic commerce. Sellers maintain databases for tracking their sales so they can easily collect and process information about buyers and create buyer profiles. This allows the sellers to quote different prices to different customers and increase their profits. Without appropriate tools, buyers cannot do an extensive search for comparing prices, so they end up paying more than the minimum available price. For example, the process of finding the least expensive airfare is sophisticated enough to convince the buyers that they are getting the lowest fares available. The present invention overcomes these shortcomings and enhances buyers performance in such electronic commerce situations.

10 The following references describe prior art in the field of improving network commerce in general. All the prior art describing commercial transactions in a network (some of which are described below) are very similar to figure 1, but none relate to the present invention's method and system for enhancing buyers performance in electronic commerce.

15 U.S. Patent No. 5,255,184 provides for an airline seat inventory control method and apparatus for computerized airline reservation systems. Described is an optimal reservation control using network-wide booking limits which takes into account the probabilistic nature of the demand.

U.S. Patent No. 5,848,139 discloses a telecommunication traffic pricing control system wherein a price controller implements a pricing strategy that is dependent on past changes in telecommunications traffic volume on the trunk group and past changes in price of delay tolerant calls, and preferably implements a set of fuzzy logic rules.

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U.S. Patent No. 5,974,308 teaches a cellular phone system that optimizes user demand by charging system subscribers according to a variable charge rate that is based on the price elasticity of subscribers. Service providers continuously determine a charge rate that can be tailored to a specific subscriber category according to a number of variables which optimizes the individual cell capacity and the overall system capacity.

World Patent No. WO 98/53415 provides a method for incorporating psychological effects such as price thresholds and promotional activity into a demand model. First, the original demand model is modified to include a mechanism to convert actual prices into perceived prices, thus causing the demand model to predict higher demand for certain prices. Then, the user modifies the function to convert from real prices to perceived prices. This modified demand function is then fitted to a sales history to yield the parameters appropriate to its particular form.

There also exist website services that search the web on behalf of the user to find sites offering the best deals on products a buyer is interested in purchasing. However, these website services fall short of bargaining on behalf of the prospective buyer.

In all the above described systems there is no mention of enhancing buyers performance in an electronic commerce scenario. Present commercial transactions are limited by sellers being better positioned to take advantage of new opportunities offered by electronic commerce. Whatever the precise merits, features and advantages of the above cited references, none of them achieve or fulfill the purposes of the present invention. The current invention puts the buyer's interests ahead of the sellers and provides for an enhanced buyer performance system in an electronic commerce situation. These and other objects are achieved by the detailed description that follows .

### SUMMARY OF THE INVENTION

The system enhances buyers performance by gathering information, presenting to sellers sophisticated buyers who do not pay more than the minimum and indicating to sellers when they are competitive, influencing them to lower prices.

In one embodiment, the system operates through a web site and creates a major web portal where a consumer may obtain advice about prices of just about anything and will be able to initiate transactions using various services provided by the system. Although the system is meant to help the end consumer, it may also be used by businesses when they need to buy from other businesses. In another embodiment, the system uses fictitious user names and works with different sellers to generate and store specific quotes. This information is later used to purchase goods on behalf of buyers who do not want to reveal their identities. As a further embodiment, the system can also uncover hidden fee structures associated with sellers and businesses.

### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates different means of transacting commercially on the Internet.

Figure 2 illustrates the general architecture of the system.

Figure 3 illustrates a method of surveying wholesale prices.

5 Figure 4 illustrates a method of surveying posted prices.

Figure 5 illustrates a method of surveying quoted prices.

Figure 6 illustrates a method of obtaining specific quotes.

Figure 7 illustrates a method of protecting buyers anonymity.

Figure 8 illustrates a method for promoting competition among sellers.

Figure 9 illustrates a method for uncovering price structures.

Figure 10 illustrates a system for enhancing buyers performance in electronic commerce.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS

10 While this invention is illustrated and described in a preferred embodiment, the invention  
15 may be produced in many different configurations, forms and materials. There is depicted in the  
drawings, and will herein be described in detail, a preferred embodiment of the invention, with the  
understanding that the present disclosure is to be considered as an exemplification of the principles  
of the invention and the associated functional specifications of the materials for its construction and  
is not intended to limit the invention to the embodiment illustrated. Those skilled in the art will  
20 envision many other possible variations within the scope of the present invention.

Figure 2 illustrates the fundamental architecture of the present system 200 which helps

enhance buyers performance by gathering information **202**, presenting to sellers **204** sophisticated buyers who do not pay more than the minimum and indicating to sellers **206** when they are competitive, influencing them to lower prices.

5           In one embodiment, the system operates through a web site and offers buyers several facilities where a consumer may obtain advice about prices of just about anything and will be able to initiate transactions using various services provided by the system. Although the system is meant to help the end consumer, it may also be used by businesses when they need to buy from other businesses. Sometimes big companies like IBM pay higher prices for items that they can buy for less if they used a different identity. Discussed below are some of the methods associated with the current invention.

10           Figure 3 illustrates the method **300** of the current invention that surveys wholesale prices. As a first step, the system collects information **302** regarding wholesale prices associated with different items. Next, the system generates reference points **304** for each of said items. Lastly, the system utilizes said reference points to assess **306** whether or not posted or quoted prices are reasonable.

15           Another facility offered by the system, as illustrated by Figure 4, is a method to survey posted prices. Commercial sites on the world-wide-web are continuously scanned **402** by the system to extract posted prices. Next, the system stores said extracted prices in a database **406** so that it can point **408** the buyer to vendors that post the best prices for an item in which the buyer is interested.

Figure 5 illustrates the present invention's method of surveying quoted prices **500**. The system continuously asks for price quotes **502** on non-quoted items at commercial sites. In order to obtain such quotes, the system generates fictitious user names **504** and works through different Internet service providers (ISP's) and requests price quotes **506** using said fictitious names so that the sellers believe they are quoting prices to real customers. Furthermore, the system creates such identities and builds for them reputations **508** as sophisticated buyers who know the market and are not willing to pay more than the minimum available price. The system is then able to generate statistical distributions **510** of quotes so that a buyer can compare **512** a quote he receives to what has been observed by the system.

Another part of the invention is a method for obtaining specific quotes **600**, as illustrated in Figure 6. First, the system conceals the buyer's true identity **602** and as a next step the system picks one of many available fictitious names **604** and uses the fictitious name to request a price quote **606** on behalf of the buyer. Said fictitious user names are picked from a list of names that have already built a reputation as a smart buyer (as explained above). Then, the system stores all the quotes **608** it has received and maintains statistics **610** about them for reference by future buyers.

As an extension to the embodiment described above, the method for purchasing on behalf of buyers and protecting buyer's anonymity is carried a step further, as described in Figure 7. The method **700** provides the buyer with the option of purchasing items **702** for him so that the buyer



does not have to disclose to the seller any information about himself. A purchase is made by the system using one of many fictitious names **704** that have built a reputation as a smart buyer. Included in the method **700** is an option to receive the item **706** at a site owned by the system operator, and shipping it from that site **708** to the true buyer.

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Figure 8 illustrates the present invention's method **800** for promoting competition among sellers. Generated in the system are e-mail messages, regular mail and faxes **802** informing sellers of lower prices quoted by their competitors and advising them **804** when they should consider lowering their prices. In addition, the system also maintains, on its website, for public viewing ratings of sellers as sellers who overcharge versus sellers who offer attractive prices **806**.

Another part of the current invention is a method **900** to uncovering price structures as illustrated in Figure 9. This service applies specifically to the airfare market. Airlines do not publish their fare structure. For example, they do not make it clear how the fare depends on the time of the day, the day of the week and the date. The buyer tells the desired time of travel and the airline returns a fare. Airline fares are repeatedly probed **902** by the present system for uncovering such structures **904**. It then suggests to the buyers **906** how money can be saved by changing the requested time of the day, day of the week, etc.

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In addition to the above described methods, the system maintains a pair of databases. First of said databases stores a list of alternate products, services, and competing sellers. With aid of said

database, the system offers the buyer alternatives that save them money, either by buying from a different vendor or by buying an alternative product. Second of said databases collects and maintains customers feedback. The system collects feedback from customers about the quality of products and service by sellers and makes the information available to future clients.

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All the above methods can be implemented in a system as shown in Figure 10 wherein said system **1000** comprises a first surveyor **1002** for surveying posted prices, a second surveyor **1004** for surveying posted quotes, and a third surveyor **1006** for surveying quoted prices. Also included is a quote-requester **1008** for obtaining specific quotes and an anonymity-protector **1010** for protecting buyers anonymity. The system further consists of a promoter **1012** for promoting competition among sellers and a price-structure-revealer **1014** for uncovering underlying fee structures. Also maintained is a first database **1016** for storing alternate products, services, and competing sellers, and a second database **1018** for collecting feedback from customers. The system thus enhances buyers performance by gathering information, presenting to sellers sophisticated buyers who do not pay more than the minimum and indicating to sellers when they are competitive, influencing them to lower prices.

The above enhancements and its described functional elements are implemented in various computing environments. For example, the present invention may be implemented on a conventional IBM PC or equivalent, multi-nodal system (e.g. LAN) or networking system (e.g. Internet, WWW or wireless web). The system and method may be performed locally, across  
5 networks or a combination thereof in a distributed environment. Communication mediums include, but are not limited to, conventional telephony mediums as well as wireless, RF, satellite, infrared, microwave, etc. All programming and data related thereto are stored in computer memory, static or dynamic, and may be retrieved by the user in conventional computer storage, display (i.e. CRT) and/or hardcopy (i.e. printed) formats. The programming of the present invention may be  
10 implemented by one of skill in the art of electronic commerce.

CONCLUSION

A system and method has been shown in the above embodiments for the effective implementation of a system for enhancing buyers performance in electronic commerce. While various preferred embodiments have been shown and described, it will be understood that there is no intent to limit the invention by such disclosure, but rather, it is intended to cover all modifications and alternate constructions falling within the spirit and scope of the invention, as defined in the appended claims. For example, the present invention should not be limited by software/program, computing environment, specific computing hardware. In addition, the specific methods for transacting via electronic commerce are representative of the preferred embodiment and should not limit the scope of the invention.